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10/033,658	12/27/2001	Nobuyuki Matsuo	SIC-01-017	7948

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EXAMINER

LE, DAVID D

ART UNIT

PAPER NUMBER

3681

DATE MAILED: 08/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/033,658

Applicant(s)

MATSUO ET AL

Examiner

David D. Le

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5-7 is/are allowed.
- 6) ☒ Claim(s) 1-4, 8-14, 17-19, 21-23, 26, 29-30, 32-42 is/are rejected.
- 7) ☒ Claim(s) 15, 16, 20, 24, 25, 27, 28 and 31 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

This is the second Office action on the merits of Application No. 10/033,658, filed on 27 December 2001. Claims 1-42 are pending.

Documents

1. The following documents have been received and filed as part of the patent application:
 - Information Disclosure Statement, received on 12/27/01
 - Amendment, received on 06/23/03
 - Substitute Drawings, received on 06/23/03

Drawings

2. The corrected or substitute drawings were received on 23 June 2003. These drawings are approved.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-4, 8, and 36 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 5,382,203 to Bellman et al.**

Claims 1-4, 8, and 36:

Bellman (Figs. 1-3; column 2, line 20 – column 3, line 16) discloses a planetary gear set carrier assembly (10) comprising:

- A first carrier member (20);
- A plurality of planet gear openings (26);
- A plurality of planet gears (16);
- A separate second carrier member (14);
- A coupler (18);
- A pinion pin opening (28);
- A bushing (34); and
- Different materials of metal being utilized (column 3, lines 7-16).

5. The indicated allowability of claims 9-34 and 39 are withdrawn in view of the newly discovered reference(s) to Silvestri (U. S. Patent No. 4,187,740). Rejections based on the newly cited reference(s) follow.

6. Claims 1-4, 8-14, 17, 18, 23, 26, 30, 39, and 41 are rejected under 35 U.S.C. 102(b) as being anticipated by U. S. Patent No. 4,187,740 to Silvestri.

Claims 1-4, 8-14, 17, 18, 23, 26, 30, 39, and 41:

Silvestri (Figs. 1-4, column 2, lines 8-60) discloses a planet carrier assembly comprising:

- A first carrier member (120) including a first carrier member axle opening for receiving an axle shaft therethrough and including a plurality of first planet gear openings for receiving a plurality of first planet gears (i.e., Fig. 2);
- A separate second carrier member (116) having a second carrier member axle opening for receiving the axle shaft (28) therethrough (i.e., Fig. 4);
- A separate third carrier member (118) having a third member axle opening for receiving the axle shaft therethrough (i.e., Fig. 4);
- Wherein the first carrier member is fastened to the second and third carrier members (i.e., Fig. 4);
- Wherein the first carrier member includes a plurality of second planet gear openings for receiving a plurality of second planet gears (i.e., column 2, lines 21-30);
- Wherein the plurality of first planet gear openings is disposed on a first side of the first carrier member, and the plurality of second planet gear openings are disposed on a second side of the first carrier member (i.e., Fig. 2);

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- A plurality of pinion pins, each pinion pin extending through the first carrier member into a corresponding first planet gear opening and second planet gear opening;
- A plurality of pair of first carrier pins (being the bolts) for nonrotatably coupling the first carrier member to the second carrier member (i.e., Figs. 3-4; column 2, lines 41-49);
- A plurality of pairs of second carrier pins (being the bolts) for nonrotatably coupling the first carrier member to the third carrier member (i.e., Figs. 3-4; column 2, lines 41-49);
- Wherein each pair of first carrier pins is located opposite a corresponding pair of the second carrier pins (i.e., Fig. 4);
- Wherein the first side of the first carrier member is substantially parallel to the second side of the first carrier member (i.e., Fig. 2);
- Wherein the first carrier member directly contacts the second carrier member and the third carrier member (i.e., Fig. 4);
- Wherein the first carrier member includes a first guide rib that engages the second carrier member (i.e., Fig. 2);
- Wherein the first carrier member axle opening is structured to allow relative rotation between the axle and the first carrier member; and
- Wherein the second carrier member axle opening is structured to allow relative rotation between the axle and the second carrier member.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 21-22 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silvestri.**

Claims 21-22 and 29:

Silvestri discloses all elements and limitations as set forth in claims 1-4, 8-14, 17-18, 23, 26, 30, 39, and 41 above. Regarding claims 21-22 and 29, ***Silvestri*** also discloses a fastener (i.e., Fig. 4, vicinity of reference number 116) for fastening the first carrier member (120) and the second carrier member (116) together. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify ***Silvestri***'s fastener such that it would extend through all three carrier members and fasten all three carrier members together, in order to provide additional strength in securing the carrier assembly.

3. Claims 19 and 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Silvestri** in view of U. S. Patent Application Publication No. US 2002/0187870 A1 to **Staheli et al.**

Claims 19 and 35:

Silvestri discloses all elements and limitations as set forth in claims 1-4, 8-14, 17-18, 23, 26, 30, 39, and 41 above. Regarding claims 21-22 and 29, **Silvestri** lacks:

- A bushing disposed in the pinion pin opening radially between the pinion pin and the first carrier member.

Staheli (i.e., Fig. 1; paragraph [0013]) teaches a multi-speed wheel hub comprising a bushing (50) disposed in the pinion pin opening radially between the pinion pin and the carrier member (18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify **Silvestri** to include the bushing, in view of **Staheli**, in order to reduce friction between the planet gear and the pinion pin.

4. **Claims 32-34 and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Silvestri in view of U. S. Patent No. 5,382,203 to Bellman et al.**

Claims 32-34 and 36-38:

Silvestri discloses all elements and limitations as set forth in claims 1-4, 8-14, 17-18, 23, 26, 30, 39, and 41 above. Regarding claims 32-34 and 37-38, *Silvestri* (column 2, lines 30-60) also discloses the first carrier being formed from of a lightweight metal, preferably aluminum.

Silvestri lacks:

- Wherein the first carrier member is formed from a different material than at least one of the second carrier member and the third carrier member;
- Wherein the first carrier member is formed of a light alloy metal; and
- Wherein the first carrier member is formed of an aluminum alloy metal.

Bellman (column 3, lines 7-16) teaches the advantage of utilizing different metal materials.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize the advantage of a light alloy metal and utilize material such as aluminum alloy in constructing a planetary carrier assembly, in view of *Bellman*, in order to reduce the overall weight of the hub transmission.

5. **Claims 40 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent No. 6,010,425 to Tabe in view of Silvestri.**

Claims 40 and 42:

Tabe (Figs. 1-3, column 4, line 5 – column 6, line 67) discloses a bicycle hub transmission comprising:

- A hub axle (21);
- A driver (22);
- A hub shell (10);
- A planetary gear mechanism (24);
- A carrier (52); and
- A plurality of planet gears (53).

Tabe lacks:

- A first carrier member;
- A second carrier member; and
- Wherein the first and second carrier member axle openings are structured to allow relative rotation between the axle shaft and the first carrier member.

Silvestri (Figs. 1-4, column 2, lines 8-60) discloses a planet carrier assembly comprising all elements and limitations that Tabe lacks above as recited in claim 40.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Tabe planetary carrier by constructing it in a multi-piece type planetary carrier, in view of Silvestri, in order to increase the strength as well as to facilitate the ease in manufacturing this type of planetary carrier at a relatively low cost.

Allowable Subject Matter

6. Claims 5-7 are allowed.
7. Claims 15-16, 20, 24-25, 27-28, and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments filed on 23 June 2003 have been fully considered but they are not persuasive.

Applicant argues:

Claim 1 recites a planet gear carrier comprising a first carrier member and a separate second carrier member while Bellman planet gear carrier (10) comprises the hub (12), which is considered as the claimed first carrier member, the face plate (14), which is considered as the claimed second carrier member, and a plurality of posts (18), are welded together to form a one-piece structure. In other words, when the Bellman structures have the status of a planet gear carrier (as opposed to an unassembled catalog of parts), there are no separate first and second carrier members.

Examiner respectfully disagrees for the following reasons:

First, the argument is considered but is not persuasive because Applicant does not specifically claim the planet gear carrier in its unassembled state.

Second, paragraph [0019] of the present specification specifically discloses three rivets (568), as shown in Figs. 4 and 6, for securely coupling first carrier member 554, second carrier member 560, and third carrier member 562 together. In general sense, without getting into the details of the riveting and the welding processes, riveting two or more parts together as one is considered equivalent to as welding two or more parts together as one.

Accordingly, it is concluded that the claimed planet gear carrier would be a one-piece structure in its unassembled state.


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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David D. Le whose telephone number is 703-305-3690. The examiner can normally be reached on Mon-Fri (0700-1530).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles A Marmor can be reached on 703-308-0830. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9326 for regular communications and 703-872-9327 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1113.


ddl
August 7, 2003


Richard M. Lorence
Primary Examiner
AU 3681